

REMARKS

Claims 1-2, 4-11 are currently pending in the present application, claim 3 having been cancelled without prejudice or disclaimer thereto. Claim 1 has been amended to include the language of dependent claim 3. Claim 5 has been amended to clarify that the catalyst comprising layer alternates with the electrolyte comprising layer. Due to the nature of these amendments, it is respectfully submitted that no new matter is introduced thereby. Accordingly, their entry is respectfully solicited.

Rejection under 35 U.S.C. 112

Claim 5 was rejected under 35 U.S.C. 112, second paragraph, as being unclear. In particular, it was asserted that the term "said layer" in line 3 of the claim did not sufficiently specify a particular layer. The rejection is traversed and it is respectfully submitted that one of skill in the art would have no difficulty understanding the meets and bounds of claim 5 in light of the specification.

Notwithstanding the above, Applicant has amended claim 5 to more clearly identify the layers referenced in the claim without narrowing the scope of the claim. Accordingly, reconsideration and withdrawal of the rejection are solicited.

Rejection under 35 U.S.C. 102

Claims 1-3, 8-11 were rejected under 35 USC 102(e) as being anticipated by JP 09-245802 to Tomoyuki. The rejection is traversed and it is respectfully submitted that claims 1-3, 8-11 are patentable within the meaning of 35 USC 102(e).

Independent claim 1 relates to a polymer electrolyte fuel cell. It comprises a membrane; and an anode and a cathode sandwiching said hydrogen ion conductive polymer electrolyte membrane. The anode and cathode include a gas diffusion layer and a catalyst layer. The claim requires that the amount of hydrogen ion conductive polymer electrolyte in the catalyst layer is large at the side of said hydrogen ion conductive polymer electrolyte membrane and is small at the side of said gas diffusion layer.

As exemplary embodiments of the claimed subject matter, Fig. 6 of the present specification illustrates structures where the catalyst layer (24) comprises hydrogen ion conductive polymer electrolyte (shown as black dots). As disclosed on page 29 of the specification, electrode having a structure where a catalysts has a higher concentration of electrolyte near the membrane has excellent characteristics (See cells A2 and B2 of Fig 6 and page 29, last full paragraph of the present specification).

In contrast, Tomoyuki teaches increasing the porosity of the catalyst layer as a means to improve the performance of an electrode of a fuel cell. See, e.g., abstract and paragraph 12 of Tomoyuki. This reference does not disclose, teach, or suggest varying the concentration of electrolyte in a catalysts, let alone independent claim 1. For this reason alone, Tomoyuki does not anticipate the pending claims.

Rejection under 35 U.S.C. 103

Claims 4, 6, 7 were rejected under 35 USC 103(a) as being obvious over the combination of Tomoyuki with JP 09-245801 (the "'801 application"). The rejection is traversed and it is respectfully submitted that claims 4, 6 and 7 are patentable within the meaning of 35 USC 103(a).

As discussed above, Tomoyuki does not disclose, teach, or suggest a catalyst layer having catalyst particles and a hydrogen ion conductive polymer electrolyte, wherein the amount of electrolyte in the catalyst layer is large at the side of a membrane and is small at the side of a gas diffusion layer, as described in claim 1. The cited '801 application does not cure this deficiency. Thus, even combining the teachings of the cited references would not teach or suggest the subject matter of independent claim 1.

Based upon the foregoing, it is respectfully submitted that claims 1-2, 4-11 are patentable over the cited art. Accordingly, reconsideration and allowance of the application are solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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